

CLAIMS

I/we claim:

- 5 1. A low-profile inserter for an angled infusion set having a cannula assembly including a cannula housing and a cannula extending from the housing to be inserted subcutaneously, the low-profile inserter comprising:
- an inserter housing having a bottom wall;
- a retainer slidably connected to the inserter housing for movement between retracted and extended positions in a direction substantially parallel with the bottom wall, the retainer being adapted to releasably receive the cannula assembly; and
- 10 a base member connected to the inserter housing, the base member having a lower surface that is adapted to contact an outer skin surface, the lower surface and bottom wall forming an acute angle, whereby the cannula can be inserted subcutaneously at said acute angle with respect to the skin outer surface.
- 15 2. A low-profile inserter according to claim 1, and further comprising:
- a biasing member connected between the retainer and the inserter housing for biasing the retainer toward the extended position; and
- a first release member for releasably holding the retainer in the retracted position.
- 20 3. A low-profile inserter according to claim 2, and further comprising a safety member slidably mounted to the inserter housing between a first locking position wherein the safety member is in locking engagement with the first release member to prevent release of the retainer when in the retracted position and a second releasing position wherein the safety member is disengaged from the first release member to thereby permit release of the retainer when in the retracted position.
- 25 4. A low-profile inserter according to claim 3, and further comprising a second release member mounted for movement with the retainer for releasably holding the cannula assembly on the retainer.
5. A low-profile inserter according to claim 3, wherein the first release member comprises a release lever pivotally mounted to the inserter housing, the release lever including a first end portion exposed through the housing for manipulation by an operator and a second end portion for engagement with the retainer to thereby hold the retainer in the retracted position,

whereby pivotal movement of the release lever in a first rotational direction causes disengagement of the second end portion and the retainer to thereby release the retainer.

6. A low-profile inserter according to claim 5, wherein the release lever is biased in a second rotational direction opposite the first rotational direction, such that movement of the retainer toward the retracted position causes the second end portion of the release lever to engage and hold the retainer.

7. A low-profile inserter according to claim 6, wherein the safety member comprises a lower surface that, in the first locking position, engages the second end portion of the release lever to thereby block movement of the release lever in the first rotational direction.

8. A low-profile inserter according to claim 2, wherein the first release member comprises a release lever pivotally mounted to the inserter housing, the release lever including a first end portion exposed through the housing for manipulation by an operator and a second end portion for engagement with the retainer to thereby hold the retainer in the retracted position, whereby pivotal movement of the release lever in a first rotational direction causes disengagement of the second end portion and the retainer to thereby release the retainer.

9. A low-profile inserter according to claim 8, wherein the release lever is biased in a second rotational direction opposite the first rotational direction, such that movement of the retainer toward the retracted position causes the second end portion of the release lever to engage and hold the retainer.

10. A low-profile inserter according to claim 1, and further comprising a release member mounted for movement with the retainer for releasably holding the cannula assembly on the retainer.

11. A low-profile inserter according to claim 10, wherein the release member comprises a release lever that is pivotally mounted to the retainer, the release lever including a first end portion exposed for manipulation by an operator when the retainer is in the extended position and a second end portion for engagement with the cannula assembly to thereby hold the cannula assembly on the retainer, whereby pivotal movement of the release lever in a first rotational direction causes disengagement of the second end portion and the cannula assembly to thereby release the cannula assembly from the low-profile inserter.

12. A low-profile inserter according to claim 1, wherein the acute angle is in the range of about 10 degrees to about 40 degrees.

13. A low-profile inserter according to claim 1, wherein the acute angle is approximately 30 degrees.

48
457 5 14. An inserter for an infusion set having a cannula assembly including a cannula housing and a cannula extending from the housing to be inserted subcutaneously, the inserter comprising:

an inserter housing;

a retainer slidably connected to the inserter housing for movement between retracted and extended positions, the retainer being adapted to releasably receive the cannula assembly;

10 a biasing member connected between the retainer and the inserter housing for biasing the retainer toward the extended position; and

15 a first release lever pivotally mounted to the inserter housing, the first release lever including a first end portion exposed through the housing for manipulation by an operator and a second end portion for engagement with the retainer to thereby hold the retainer in the retracted position, whereby pivotal movement of the first release lever in a first rotational direction causes disengagement of the second end portion and the retainer to thereby release the retainer.

20 15. An inserter according to claim 14, wherein the first release lever is biased in a second rotational direction opposite the first rotational direction, such that movement of the retainer toward the retracted position causes the second end portion of the first release lever to engage and hold the retainer.

25 16. An inserter according to claim 15, and further comprising a second release lever mounted for pivotal movement on the retainer, the second release lever including a first end portion exposed for manipulation by an operator when the retainer is in the extended position and a second end portion for engagement with the cannula assembly to thereby hold the cannula assembly on the retainer, whereby pivotal movement of the second release lever in the first rotational direction causes disengagement of the second end portion of the second release lever and the cannula assembly to thereby release the cannula assembly from the inserter.